

REMARKS

Claims 1-9 are pending in the application. Claims 1, 2, 5, 7-9, 12 and 14-16 are amended, and claims 18 and 19 are newly added. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

As an initial matter, Applicants wish to thank the Examiner for the interview which was conducted with Applicants' U.S. representative on December 12, 2007. During the interview, Applicants' U.S. representative advised the Examiner that Applicants would file a verified English language translation of certain paragraphs of International Application No. PCT/JP02/13729, of which the present application is the U.S. national stage. As Applicants' U.S. representative indicated during the interview, the translated paragraphs provide support for the present amendments to claims 5 and 12, as discussed below.

During the interview, Applicants' U.S. representative also presented arguments concerning claims 1 and 2 similar to those discussed herein below, and discussed new dependent claims 18 and 19. However, no agreement as to these claims was reached during the interview.

In the Office Action, the Examiner objected to the drawings, asserting that Figs. 6 and 7 should be designated by a legend such as -- Prior Art --. Applicants have amended Figs. 6 and 7 by designating them with a -- Conventional Art -- legend, and thus, respectfully request that the Examiner withdraw the objection to the drawings.

In the Office Action, the Examiner rejected claims 5 and 12 under 35 U.S.C. §112, 1st paragraph as failing to comply with the written description requirement.

Specifically, the Examiner asserted that the term “crimp” is not supported by the disclosure as originally filed.

Attached to the present Response is a verified English language translation of two relevant paragraphs of International Application No. PCT/JP02/13729, one beginning at line 22 of page 7, and one beginning at line 3 of page 9. According to the translation, the lid 4 is joined to the open end of the outer case 2 by a fixing groove 13 that is formed by swaging. The corresponding paragraphs of the present U.S. national stage application, as originally filed, beginning on line 12 of page 12, and line 19 of page 14, respectively, disclose that the fixing groove 13 is formed by caulking, rather than swaging. However, Applicants submit that swaging is a more accurate translation than caulking, as can be appreciated by one of ordinary skill in the art.

Applicants have amended pages 12 and 14 of the specification accordingly, and have also amended claims 5 and 12. Claims 5 and 12, as currently amended, recite that the outer case and the lid are joined together by a fixing groove formed by swaging the outer case. Applicants respectfully submit that this feature is supported by the disclosure of the International Application, and thus, respectfully request that the Examiner withdraw the 35 U.S.C. §112, 1st paragraph rejection.

In the Office Action, the Examiner rejected claims 9 and 16 under 35 U.S.C. §112, 2nd paragraph as being indefinite for failing to particularly point out and distinct claim the subject matter regarded as the invention. Specifically, the Examiner found the terminology “a similar material” to be unclear. Applicants have amended claims 9 and 16 to remove the terminology “a similar material”, and thus, request that the Examiner withdraw the 35 U.S.C. §112, 2nd paragraph rejection.

In the Office Action, the Examiner rejected claims 2, 4 and 13-15 under 35 U.S.C. §102(b) as being anticipated by Terashi (Japanese Patent Publication No. 2000-340210), or alternatively, under 35 U.S.C. §103(a) as being obvious over Terashi. Applicants respectfully traverse the rejection for at least the following reasons.

Applicants' claim 2 recites a battery which includes, inter alia, an electrode assembly including a positive electrode plate and a negative electrode plate. Core materials of the positive and negative electrode plates are bared at ends of the electrode assembly. The battery also includes a lid. The lid is welded to the bared portion of the core material of one of the electrode plates of the electrode assembly to serve as a current collector plate.

Terashi discloses a battery which includes an electrode object 2, an obturation plate 11, a current collection section 5 and a current collection member 4. The electrode object 2 includes a positive electrode 21 and a negative electrode 23, and the current collection member 4 includes a monotonous section 43 and a tab section 42. See, e.g., Figure 1 of Terashi, and paragraphs [0013] – [0017] of the English language translation of Terashi.

Applicants respectfully submit that Terashi's lid (obturation plate) 11 is not welded to a bared portion of an electrode plate of the electrode object 2. Rather, Terashi's lid 11 is welded only to the tab section 42. See, e.g., Figure 1 of Terashi and paragraph [0017] of the English language translation of Terashi. Applicants submit that Terashi's tab section 42 is not an electrode plate; instead, Terashi's tab section 42 connects the lid 11 to the monotonous section 43. See, e.g., Figure 1 of Terashi.

Thus, Applicants respectfully submit that Terashi fails to disclose or suggest a battery which includes an electrode assembly and a lid, where the lid is welded to a bared portion of core material of an electrode plate of the electrode assembly to serve as a current collector plate, as recited in Applicants' claim 2.

For at least these reasons, Applicants respectfully submit that the invention recited in Applicants' claim 2 is neither anticipated by nor obvious over Terashi, and thus, respectfully request that the Examiner withdraw the 35 U.S.C. §102 and 35 U.S.C. §103 rejections, and allow claim 2.

Applicants submit that claims 4 and 13-15 are also in condition for allowance, in view of their dependency from claim 2.

In the Office Action, the Examiner rejected claims 1, 3, 6-8, 10, 11 and 17 under 35 U.S.C. §103(a) as being unpatentable over Terashi in view of Marukawa et al. (U.S. Patent No. 5,900,332). Applicants respectfully traverse the rejection for at least the following reasons.

Applicants' claim 1 recites a battery which includes, inter alia, a lid. The lid includes a connecting part in one piece therewith that engages with and connects a bottom part of an outer case of another battery to be connected.

In the Office Action, the Examiner acknowledged that the lid of Terashi's battery does not include a lid including a connecting part in one piece therewith that engages with and connects a bottom part of an outer case of another battery to be connected. However, the Examiner asserted that this feature was taught by Marukawa et al. Applicants respectfully disagree.

Marukawa et al. discloses a battery which includes a metal casing 11 and a lid (metal electrode) 10. See, e.g., Figure 1 of Marukawa et al. Marukawa et al. discloses that a metal electrode 10 of a first cell 100A and a metal casing 11 of a second cell 100B are connected by using a connector 1. See, e.g., Figure 1 and col. 3, line 57 – col. 4, line 2 of Marukawa et al.

Applicants respectfully submit that Marukawa's connector 1 is not in one piece with the lid (metal electrode) 10. Rather, the connector 1 is a separate piece which is welded to the metal electrode 10. See, e.g., Figure 1 and col. 4, lines 27-29 of Marukawa et al.

Thus, Applicants respectfully submit that the combination of Terashi and Marukawa et al. fails to disclose or suggest a battery which includes a lid including a connecting part in one piece therewith that engages with and connects a bottom part of an outer case of another battery to be connected, as recited in Applicants' claim 1.

For at least these reasons, Applicants respectfully submit that the invention recited in Applicants' claim 1 is not obvious over the combined teachings of Terashi and Marukawa et al., and thus, respectfully requests that the Examiner withdraw the 35 U.S.C. §103 rejection, and allow claim 1.

Applicants submit that claims 3, 6-8, 10, 11 and 17 are also in condition for allowance, in view of their dependency from claim 1.

In the Office Action, the Examiner rejected claim 5 under 35 U.S.C. §103(a) as being unpatentable over Terashi in view of Marukawa et al., and further in view of Ikoma (U.S. Patent No. 5,663,007); rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over Terashi in view of Ikoma; and rejected claims 9 and 16 under 35

U.S.C. §103(a) as being unpatentable over Terashi in view of Marukawa, and further in view of Tucholski (U.S. Patent Application Publication No. 2002/0031705) and the American Heritage Dictionary.

Applicants respectfully submit that Ikoma, Tucholski and the American Heritage Dictionary fail to overcome the above-noted deficiencies of Terashi and Marukawa et al. That is, Applicants submit that the combined teachings of Terashi, Marukawa et al., Ikoma, Tucholski and the American Heritage Dictionary fails to disclose or suggest a battery which includes a lid including a connecting part in one piece therewith that engages with and connects a bottom part of an outer case of another battery to be connected, as recited in Applicants' claim 1, or a battery which includes an electrode assembly and a lid, where the lid is welded to a bared portion of core material of an electrode plate of the electrode assembly to serve as a current collector plate, as recited in Applicants' claim 2.

Thus, Applicants submit that the inventions recited in claims 5, 9, 12 and 16, which depend from claims 1 and 2, are not obvious in view of the applied prior art, and thus, respectfully request that the Examiner withdraw the 35 U.S.C. §103(a) rejections.

Applicants have added new dependent claims 18 and 19 for the Examiner's consideration. Claims 18 and 19 depend from claims 1 and 2, respectively, and recite that the lid comprises a cylindrical portion, integrally formed in the lid, which is shaped to receive and connect to a bottom of another battery. Applicants respectfully submit that this feature is not taught by the applied prior art.

Based on the above, it is respectfully submitted that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION


Reconsideration of the outstanding Office Action and allowance of the present application and all of the claims therein are respectfully requested and believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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Attachments: Replacement drawing sheets (2 sheets)
Verified partial English language translation of International Application
No. PCT/JP02/13729